GROUND WATER SAMPLING REPORT

ROSS/DUBLIN MALL
Dublin, California

June 24, 1994

Prepared For

Ardenbrook, Inc. Property
4725 Thornton Avenue
Fremont, California 94536

Prepared By

TMC ENVIRONMENTAL, INC.
13908 San Pablo Avenue, Suite 101
San Pablo, California 94806

Michael Princevalle
Senior Project Manager

Mark Youngkin
Engineering Geologist

Project Number 116994

GROUND WATER SAMPLING REPORT
Ross/Dublin Mall
Dublin, California

PLATES

ATTACHMENTS

GROUND WATER SAMPLING REPORT

Ross/Dublin Mall
Dublin, California

1.0 INTRODUCTION

Per the request and authorization of Mr. Ken Chait of Ardenbrook, Inc., **TMC ENVIRONMENTAL, Inc.** (**TMC**) recovered ground water samples from the property referenced as the Ross/Dublin Mall, located at the south east corner of Regional Street and Dublin Boulevard, Dublin, California; see Plate 1, Site Location Map. The property is occupied by a "fast food" restaurant, various retail stores and a parking lot.

To access the ground water, two bores were drilled down to the shallow water-bearing zone at the site. One "grab" ground water sample was recovered from each bore and chemically analyzed for gasoline. The samples were located in the north west portion of the property, in the parking lot; see Plate 2, Boring Locations Map. The purpose of this work was to investigate for the presence of gasoline-contaminated ground water at the site, from possible off-site sources. This work was performed on June 3, 1994. All work was performed under the supervision of a State-Certified Engineering Geologist.

2.0 SCOPE OF WORK

The scope of work consisted of the following:

1. Obtaining and completing boring permits as required by the Alameda County Flood Control District, Zone 7.

2. Providing for an underground utility survey/clearance in the boring locations.

3. Drilling two soil borings down to the shallow water bearing zone (assumed to be 16 feet below grade) to facilitate the recovery of ground water samples.

4. Recovering one "grab" ground water sample from each soil bore, and submitting the samples to a laboratory for the chemical analysis of gasoline, benzene, toluene, ethyl benzene, and xylenes.

5. Back filling the borings up to surface grade with cement.

6. Writing this report.

3.0 RESULTS OF FIELD WORK

3.1 Soil Sampling

Prior to commencing the field work, **TMC** obtained and completed a soil boring permit, as required by the Alameda County Flood Control District, Zone 7. A copy of the permit is in Attachment 1, Boring Permit.

To perform the underground survey for the clearance of boring locations, **TMC** contacted Subtronic Corporation, an underground utility survey company, located in Concord, California. This work was performed June 3, 1994, prior to commencing the soil boring activities.

Upon completion of the utility survey, the soil boring activities commenced. A State-licensed drilling contractor, Soil Exploration Services, Inc, of Benicia, California, performed the drilling services. Standard truck-mounted drilling equipment was used. Borings were advanced with hollow-stem auger.

During the drilling activities, **TMC** visually examined the subsurface soils encountered in the bores. **TMC** performed this task by recovering relatively undisturbed soil samples from each bore at approximately five-foot intervals. Details of the soils encountered are presented in Attachment 2, Logs of Borings. **TMC** observed no visual evidence of petroleum contamination (i.e., staining, odors, etc) in any of the soil samples or drill cuttings.

Each sample was placed in dedicated, clear, plastic baggie and labeled. The baggies were then sealed and placed in the sunlight for approximately one hour to allow the soil sample within to warm. Using a Sensidyne FID, soil vapor readings were taken of each baggie. The values are presented on the bore logs. All vapor readings were at or below one part per million (ppm), indicating no appreciable levels of petroleum materials/contaminants in the soils.

Generally, the soils encountered were brown clayey silts/silty clays, with a layer of fine sand at approximately 10 to 15 feet deep. In boring B-1, ground water was encountered at approximately 20 to 25 feet below grade. In boring B-2, very moist to wet soils were encountered at approximately 15 feet deep, however, the boring had to be advanced to 30 feet before the bore would yield sufficient water for sampling.

3.2 Ground Water Sampling

Once the drilling was completed, ground water was allowed to recover into the bores. Clean, 2-inch PVC well slot and casing were placed into the bores. Prior to sampling, each bore was purged of approximately five gallons of water to allow relatively fresh water into

the bores. Once the purging was completed, ground water in each bore was sampled. **TMC** saw no obvious evidence (i.e., petroleum sheen, odor, etc.) of petroleum contamination in the water recovered from the bores. Clean, dedicated Teflon bailers were used to purge and sample the bores. The water samples were poured into 40-milliliter vials, labeled, and placed on ice for transport to a laboratory to be chemically analyzed for gasoline (gas), benzene, ethyl benzene, and xylenes (BTEX). The samples are indicated as B-1 and B-2 in this report and in Attachment 3, Laboratory Results.

Once the ground water sampling was complete, each soil bore was back filled up to surface grade with Portland cement grout. All drill cuttings and equipment wash water were placed in 55-gallon drums and placed on site. **TMC** will dispose of these materials upon your authorization.

4.0 CHEMICAL ANALYSIS OF GROUND WATER SAMPLES

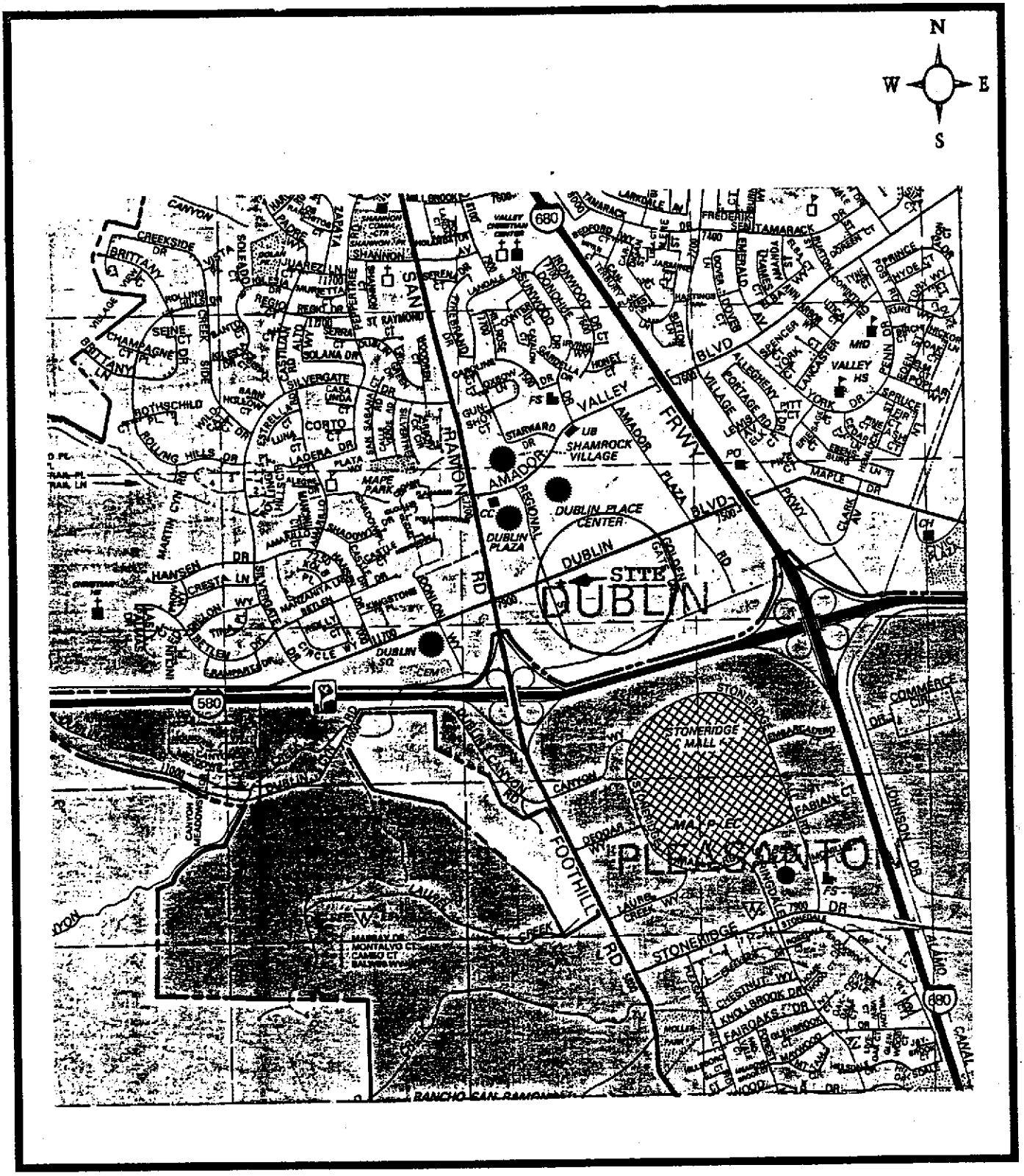
The samples were transported to a State-certified laboratory, AMER of Sunnyvale, California, for chemical analysis. The chemical analysis results of the ground water samples are presented in Attachment 3.

The results show detectable levels of gasoline in B-1 and B-2 of 80 and 190 parts per billion (ppb), respectively, and are above reporting limits. As such this information should be forwarded to the Alameda County Department of Health for their review and comment. BTEX levels are below detection limits.

5.0 LIMITATIONS

Environmental regulations, on a local, state, and federal level, can vary significantly over time. Similarly, Property conditions will change over time. Consequently, the conclusions and recommendations arrived at in the course of preparing the environmental assessment are strictly applicable to the status of environmental regulations and the Property conditions existing at the time **TMC** performs the study. Due to budget constraints, **TMC** cannot have complete knowledge of underlying conditions on the property. The findings of this report apply to the present conditions only; the opinions expressed herein are subject to revisions in light of new information, and no warranties are expressed or implied that the property is free of environmental impairment, only that our services have been performed in accordance with generally accepted existing environmental principles and regulations. This report and all matters contained herein were prepared for the sole and exclusive benefit of the client specified herein, and is intended only for the use of the client. Neither all, nor any part of the contents of this report, or copy thereof, shall be used for any purpose by anyone but the client specified herein nor shall it be conveyed or disseminated by anyone without

the express written consent of the authors and firm. Any person or entity who obtains or reads this report, or a copy thereof, other than the client specified herein, expressly assumes all risk of damages to himself or other persons arising out of reliance thereon or use thereof and waives the right to bring any action based on this report, directly or indirectly, and the authors and firm shall have no liability to any such person or entity.



TMC
Environmental, Inc.

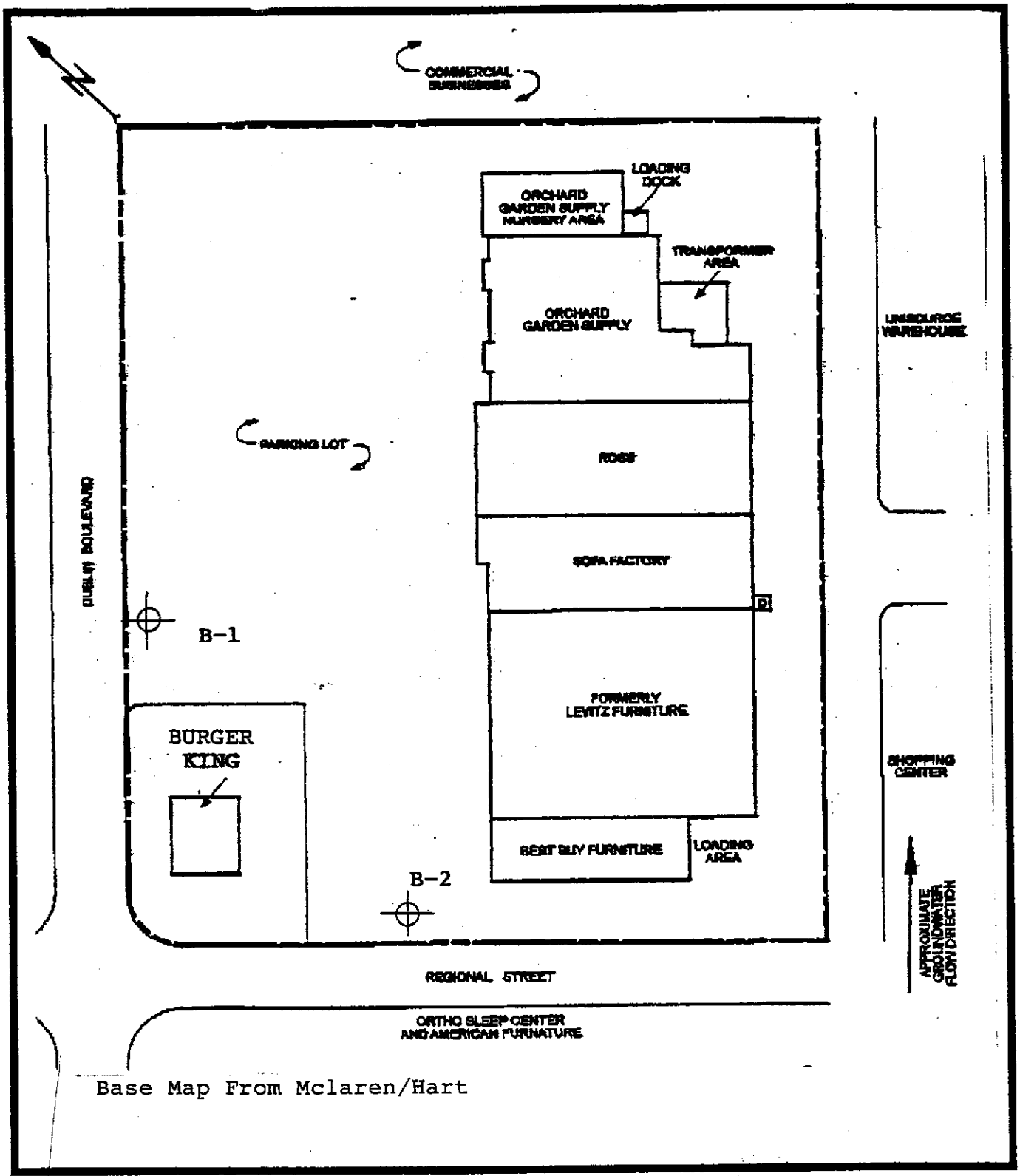
SITE LOCATION MAP

Ross/Dublin Mall
Dublin, California

Project No. 1-16994 June, 1994

PLATE

1



Base Map From Mclaren/Hart

TMC
Environmental, Inc.

BORING LOCATIONS MAP

Ross/Dublin Mall
Dublin, California

Project No. 1-16994 June, 1994

PLATE

2

ATTACHMENT 1

BORING PERMIT

RECEIVED
JUN 1994
ZONE 7, ACFC&WCD

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE ♦ PLEASANTON, CALIFORNIA 94588 ♦ (415) 484-2600

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT Ross Retail Center/ Dublin Mall
7884 Dublin Blvd., Dublin, CA

PERMIT NUMBER 94335
LOCATION NUMBER

CLIENT
Name Liberty House Properties, c/o Ardenbrook, Inc.
Address 4725 Thorton Av Phone 797-7980
City Fremont Zip 94536

APPLICANT
Name TMC Environmental, Inc
13908 San Pablo Ave, Ste. 101
Address San Pablo Phone 232-8366
City Zip 94801

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	___	General	___
Water Supply	___	Contamination	X
Monitoring	___	Well Destruction	___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other ___
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger X
Cable ___ Other ___

DRILLER'S LICENSE NO. C 57 582696

WELL PROJECTS
Drill Hole Diameter ___ in. Maximum
Casing Diameter ___ in. Depth ___ ft.
Surface Seal Depth ___ ft. Number ___

GEOTECHNICAL PROJECTS
Number of Borings 2 Maximum
Hole Diameter 8 in. Depth 20 ft.

ESTIMATED STARTING DATE 6/3/94
ESTIMATED COMPLETION DATE 6/3/94

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Michael Pinnella Date 5/31/94
TMC Environmental Inc

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

(C.) GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 3 Jun 94
Wyman Hong

51991

ATTACHMENT 2

LOGS OF BORINGS

SUBSURFACE LOG OF BORING NUMBER B-1

PROJECT NAME: Ardenbrook, Inc.	**PROJECT #:** 116994	**SHEET** 1 **OF** 1
LOCATION: Ross/Dublin Mall, Dublin, California	**DATE:** 06-03-1994	
DRILLER: Soils Exploration Services	**LICENSE #:** C57-582696	
DRILL METHOD: CME 55, 8" O.D. Hollow Stem, Flight Auger	**SAMPLE METHOD:** 2" x 24" Split Spoon; 140 lbs. @ 30"	
AGENCY: Zone 7	**INSPECTOR:** N/A	**BORING DIA:** 8"
LOGGER: Michael A. Princevalle	**AGENCY PERMIT NO. :** 94335	**TOTAL DEPTH:** 25'

*** NOTICE - CONDITIONS APPLY TO THIS LOG - SEE EXPLANATION OF LIMITATIOINS ***

SAMPLE NUMBER	SAMPLE DEPTH	% REC	BLOWS /FT	VAPOR PPM	MODE	DEPTH FEET	USCS	DESCRIPTION	STAIN/ OTHER
								Surface - Asphalt	
B1-1	4 - 5 1/2'	100	26	1.0		5		Clayey SILT, with very fine sand; Brown; Moist; Firm.	No
B1-2	9 - 10 1/2'	100	10	1.0		10		Very fine SAND with fines; Brown with faint orange mottles; Moist; Friable.	No
B1-3	14 - 15 1/2'	100	16	<1		15		Clayey SILT with very fine sand; Brown; Moist Friable.	No
B1-4	19 - 20 1/2'	100	16	<1		20		Silty CLAY; Brown; Moist with pockets of wet pores; Firm.	No
B1-5	24 - 25 1/2'	100	10	1.0		25		Same as above; increase in sand. 1' water in bore. Boring terminated.	No
								Inserted 25', 2" I.D. PVC well screen and casing into bore to recover water sample.	
								6 sacks Portland cement grout.	

THIS LOG OF SUBSUFACE CONDITIONS APPLIES TO THE SPECIFIC LOCATION AND DATE INDICATED. THIS LOG IS NOT WARRENTED TO REPRESENT CONDITIONS AT OTHER LOCATIONS OR OTHER DATES.

SUBSURFACE LOG OF BORING NUMBER B-2

PROJECT NAME: Ardenbrook, Inc.	**PROJECT #:** 116994	**SHEET** 1 **OF** 1
LOCATION: Ross/Dublin Mall, Dublin, California	**DATE:** 06-03-1994	
DRILLER: Soils Exploration Services	**LICENSE #:** C57-582696	
DRILL METHOD: CME 55, 8" O.D. Hollow Stem, Flight Auger	**SAMPLE METHOD:** 2" x 24" Split Spoon; 140 lbs. @ 30"	
AGENCY: Zone 7	**INSPECTOR:** N/A	**BORING DIA:** 8"
LOGGER: Michael A. Princevalle	**AGENCY PERMIT NO. :** 94335	**TOTAL DEPTH:** 30'

*** NOTICE - CONDITIONS APPLY TO THIS LOG - SEE EXPLANATION OF LIMITATIOINS ***

SAMPLE NUMBER	SAMPLE DEPTH	% REC	BLOWS /FT	VAPOR PPM	MODE	DEPTH FEET	USCS	DESCRIPTION	STAIN/ OTHER
								Surface - Asphalt	
B2-1	4 - 5 1/2'	100	22	1.0		5		Clayey SILT, with very fine sand; Brown; Damp; Firm.	No
B2-2	9 - 10 1/2'	100	20	1.0		10		Clayey SILT, with fine sand; Brown with few, faint orange mottles; Damp; Firm.	No
B2-3	14 - 15 1/2'		10	<1		15		Very fine sand with fines; Brown; Moist to very moist; Friable.	No
B2-4	19 - 20 1/2'			<1		20		Silty CLAY, some very fine sand; Brown; Moist with pockets of wet pores; Firm. 6" water in bore.	No
						25		11:30 Pulled out augers; No water in bore. Advanced down to 30'.	No
-----	28 - 29 1/2'	----	-----	----		30		Silty CLAY; with fine sand; Brown; Moist; Firm; Water on sampler. Boring terminated.	No
								Inserted 30', 2" I.D. PVC well screen and casing into bore to recover water sample.	
								8 sacks Portland cement grout.	

THIS LOG OF SUBSUFACE CONDITIONS APPLIES TO THE SPECIFIC LOCATION AND DATE INDICATED. THIS LOG IS NOT WARRENTED TO REPRESENT CONDITIONS AT OTHER LOCATIONS OR OTHER DATES.

ATTACHMENT 3

LABORATORY REPORTS

AMER
Advanced Materials Engineering Research, Inc.

ANALYSIS REPORT
(ELAP Certificate No. 1909)
EPA METHOD 8015M

CLIENT:
TMC ENVIRONMENTAL, INC.
13908 San Pablo Avenue, Suite 101
San Pablo, CA 94806
MATRIX: WATER
PROJECT MANAGER: M. Princevalle
PROJECT: Ross/Dublin Mall # 116994

DATE SAMPLED: 06-03-94
DATE RECEIVED: 06-06-94
DATE REPORTED: 06-16-94
AMER ID: E243

Client I.D.	AMER I.D.	8015M/ TPH-GASOLINE	DF
B1	E4060603	**80**	1
B2	E4060604	**190**	1
Units		ug/l	
Detection Limits (DL)		50ug/l	

ND Not Detected. All analytes recorded as ND were found to be under the limit of detection.

Reviewed By

Lei Chen, Laboratory Manager

783 East Evelyn Ave., Sunnyvale, CA 94086 Tel. (408) 738-3033 Fax. (408) 738-3035

AMER
Advanced Materials Engineering Research, Inc.

ANALYSIS REPORT
(ELAP Certificate No. 1909)
EPA METHOD 8020

CLIENT:
TMC ENVIRONMENTAL, INC.
13908 San Pablo Avenue, Suite 101
San Pablo, CA 94806
MATRIX: WATER
PROJECT MANAGER: M. Princevalle
PROJECT: Ross/Dublin Mall # 116994

DATE SAMPLED: 06-03-94
DATE RECEIVED: 06-06-94
DATE REPORTED: 06-16-94
AMER ID: E243

Client I.D.	AMER I.D.	Benzene	Toluene	Ethyl Benzene	Total Xylene	DF
B1	E4060603	ND	ND	ND	ND	1
B2	E4060604	ND	ND	ND	ND	1
Units		ug/l	ug/l	ug/l	ug/l	
Detection Limits (DL)		0.5ug/l	0.5ug/l	0.5ug/l	1.0ug/l	

ND Not Detected. All analytes recorded as ND were found to be under the limit of detection.

Reviewed By

Lei Chen, Laboratory Manager

783 East Evelyn Ave., Sunnyvale, CA 94086 Tel. (408) 738-3033 Fax. (408) 738-3035

EPA M. 8015/8020 TEST QA/QC TABLE

AMER WORKORDER: E243

AMER I.D. Number: E4060903-SP
TMC ENVIRONMENTAL, Inc. Project: Ross/Dublin Mall # 116994
Ext/Prep. Method: EPA 5030, DHS TPH
Date: 06/09/94
Analyst: CMB/LC

Analytical Method: EPA M. 8015/8020
Analysis date: 06/09/94
Analyst: CMB/LC
Matrix: Water
Unit: ug/l

Analyte	Sample Result	Spike Level	Matrix Spike Result	Ms Recovery %	Matrix Spike Dul. Result	MSD Recovery %	Average Recovery %R	LCL %R	UCL %R	RPD %	UCL %RPD
Benzene	0.81	20.00	18.95	91	18.12	87	89	76	127	5	11
Toluene	2.51	20.00	18.46	80	17.49	75	77	76	125	6	13
Chlorobenzene	0.00	20.00	17.94	90	17.37	87	88	75	130	3	13

Notes:
Spike Level- Level of Concentration Added to the Sample
MS Result- Matrix Spike Result
MS %R- Matrix Spike Percent Recovery
MSD Result- Matrix Spike Duplicate Result
MSD %R- Matrix Spike Dublicate Percent Recovery
LCL- Lower Criteria Level
UCL- Upper Criteria Level
RPD- Relative Percent Difference

AMER, INC.

783 E. Evelyn Avenue
Sunnyvale, CA 94086
(408) 738-3033 (408) 738-3035

CHAIN OF CUSTODY

Date 6/3/94 Page 1 of 1 (510) 232-8366

AMER Report # ~~93~~ E243

Turnaround: (Normal) 48 Hour 24 Hour Need Verbal Results by 6/10/94

CLIENT		PROJECT NAME #116994	8015M/TPH GASOLINE	8015M/TPH DIESEL	8020/602 BTEX	5520F (TOG)	8010/601	8240	8270	504/8011	METALS		ARCHIVE
~~Ardenbrook~~ TMC Env. Inc.		Ross/Dublin Mall											
ADDRESS San Pablo, CA		PROJECT MANAGER M Lincavalle											
		Phone Number (510) 232-8366											

	CLIENT I.D.	LAB I.D.	DATE SAMPLED	MATRIX AIR	MATRIX SOIL	MATRIX WATER	8015M/TPH GASOLINE	8015M/TPH DIESEL	8020/602 BTEX	5520F (TOG)	8010/601	8240	8270	504/8011	METALS		ARCHIVE
							~~X~~										
1:15	B1		6/3/94			X	X		X								
2:15	B2		6/3/94			X	X		X								

RELINQUISHED BY	DATE / TIME	RECEIVED BY	DATE / TIME
Michael Lincavalle	DATE 6/6/94 TIME 2:45	Ben	DATE 6/6/94 TIME 2:45
RELINQUISHED BY	DATE TIME	RECEIVED BY Jennifer Burden	DATE 6/6/94 TIME 4:20